

**REPORT FOR THE
INDEPENDENT THIRD PARTY
DATA VALIDATION REPORT**

**SUPPLYSIDE AND FORRESTAL LANDFILL
4th QUARTERLY MONITORING EVENT
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS
U.S. NAVY PROJECT NUMBER: N40083-05-A-4217
BPA Call # 0025**

Prepared for:

**Department of the Navy
Naval Station Great Lakes
Naval Facilities Engineering Command, Midwest
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Versar Project Number: 111186.0001.025

November 18, 2007

Report Written by:

Donna A. Oswald

Donna A. Oswald, Ph.D

DATA VALIDATION REPORT FOR NAVSAC-MIDWEST,

Kemron Project Numbers L0708054, L0708423

Project: Naval Station Great Lakes (NSGL), Great Lakes, Illinois.
Quarterly Groundwater Monitoring at Forrestal and Supply Side Landfills
4th Quarterly Event

Laboratory: Kemron Environmental Services, Marietta, OH
Underwriters Laboratories, Inc., South Bend, IN

Analyses: Volatile Organic Compounds (VOC) by SW846 Method 8260B
Semivolatile Organic Compounds (SVOC) by SW846 Method 8270C
Pesticides (PEST) by SW846 Method 8081B and EPA Method 525.2 (UL, Inc.)
PCBs by SW846 Method 8082
Herbicides by SW846 Method 8150, and EPA Method 531.1(UL, Inc.)
TAL Metals by USEPA/SW846 Methods 6010B/7000 Series: Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc
Biological Oxygen Demand (BOD) by SM 5210B
Chloride by EPA Method 325.2
Chemical Oxygen Demand (COD) by EPA Method 421.4
Total Cyanide (CN) by SW846 Method 9014B
Hexavalent Chromium (CR6) by SM 3500Cr
Fluoride (F) by SM 4500F
Phenols by EPA Method 420.1
Ammonia by EPA Method 350.1
Nitrates by EPA Method 353.2
Oil and Grease/Hexane extractable by EPA Method 1664
Phosphorous by EPA Method 365.4
Sulphate by EPA Method 375.4
Total Dissolved Solids (TDS) by EPA Method 160.1
Total Organic Carbon (TOC) by EPA Method 415.1
Total Suspended Solids (TSS) by EPA Method 160.2

Matrices: 13 Aqueous Field Samples, 1 Aqueous Equipment Blank, 12 Aqueous Trip Blanks,
Reviewer: Donna Oswald, Ph. D.
Date: November 18, 2007

1.0 INTRODUCTION

Eleven aqueous monitoring well samples, two duplicate samples, one aqueous equipment blank and 12 aqueous trip blanks were collected at Naval Station Great Lakes (NSGL), Great Lakes, Illinois from newly installed monitoring wells at the Supplside and Forrestal Landfills from July 31st through August 23rd, 2007. Field samples were sent to Kemron Environmental Services (Kemron), located in Marietta, Ohio, for analysis of IEPA L1 and L2 constituents (Appendix A) except for the analysis for aachlor, adicarb, atrazine and carbofuran which were subcontracted to Underwriters Laboratories, Inc. The trip blank was analyzed for VOCs only. Analyses were performed in accordance with the Department of Defense Quality Systems Manual, version 3 (DOD QSM3, May 2005). Some compounds not part of the QSM target analyte list were also included to satisfy IEPA reporting

requirements. For any L1 or L2 parameters not included in the QSM, the laboratory historical statistical limits method or laboratory QC requirements were used to evaluate the analytical results. Any non-compliances reported by the laboratory for compounds that are not included on IEPA's L1/L2 reporting list are not discussed in this report. Ten percent of the field samples were submitted for validation along with any associated field QC samples. The samples chosen for validation were FL-02 from Kemron Project Number L07-08423 and SL-03 from Kemron project number L07-08054. The associated chain of custody documentation is found in Appendix B. A listing of qualified data is found in Appendix C.

The data were qualified in accordance with the validation protocols in the DOD QSM ver3 (May, 2005). A summary table of qualified results and the rationale behind the data qualification is presented in Appendix C. The laboratory performed the initial review of the data package, and qualified the data in accordance with the DOD QSM requirements. Final qualification of the data was made by the Versar project chemist based on results of the data validation. The following items were reviewed during the data validation process: chain of custody, sample condition upon receipt, extraction/analysis holding times, method detection/reporting limits, internal standards, surrogates, matrix spike/matrix spike duplicate (MS/MSD) analysis results, laboratory control sample (LCS) recoveries, initial and continuing calibrations, second source calibration verification standards, laboratory method and field QC blank contamination, instrument tuning and field duplicates.

The hierarchy of QSM qualifiers applied by the laboratory and or the Versar project chemist from least to most severe are as follows;

U – Undetected at the limit of detection: The associated data value is the limit of detection, adjusted by any dilution factor used in the analysis.

UJ – Undetected at the limit of detection. The reporting limit is an estimation due to quality control deficiencies.

J – Estimated: The analyte was positively identified; the quantitated value is an estimation (for example, matrix interference, below standard, outside the calibration range).

Q – One or more quality control criteria (for example, LCS recovery, surrogate spike recovery) failed. Data usability should be carefully assessed by the project team.

R – Data is rejected and not suitable for use for decision making purposes.

2.0 VALIDATION

All calibration requirements as summarized in Appendix D were performed for all samples. All QC criteria were met except as summarized below. Results associated with non-compliances were qualified in accordance with the DOD QSM. Results reported between the method detection limit (MDL) and the reporting limit (RL) or limit of quantitation (LOQ) are qualified "J". These results are considered to be qualitatively acceptable but quantitatively suspect due to poor analytical precision near the limit of detection.

The equipment blank associated with this sampling event was collected on a date (8/23/2007) after all field sampling activities had ended (samples collected from 7/31/2007 – 8/21/2007) and therefore is not valid for comparison purposes. A valid equipment blank is collected immediately following equipment decontamination

preferable after equipment has been used for sample collection, but may be also collected prior to the next sample location has been collected. For this project, only 1 sample was collected per day and equipment was decontaminated prior to the days events. Equipment decontamination procedures were discussed with the field staff after the last sampling event, however this event had subsequently concluded and the equipment blank had already been collected and so changes in field equipment blank collection could not be implemented in time for the 4th quarterly sampling event. For quality purposes the equipment blank should be collected in between collection of field sampling activities. While this equipment blank was collected in a manner consistent with actual field conditions, it really doesn't provide useful information regarding volatiles as they can be expected to have evaporated off of the equipment during the elapsed time. This same condition would have existed during actual field activities, therefore there shouldn't be any impact on the data. There is no indication of cross contamination for this sampling event, therefore data quality is not impacted.

There was no matrix spike/matrix spike duplicate sample associated with either of these sample projects. The designated MS/MSD pair were part of another laboratory project (L0708175) The laboratory analyzed a LCS/LCS Duplicate pair to evaluate process precision. Method precision as demonstrated by successful analysis of the LCS/LCSD pair was acceptable.

Volatile Data (Method 8260B)

All project specific QC criteria were met, except as indicated below:

Second source calibration standard criteria (%Difference \leq 25%) was not met for vinyl acetate which was biased high for both sampling events. Continuing Calibration criteria (%Difference \leq 20%) were not met for vinyl acetate (%D = 140%) which exhibited high bias, and iodomethane (%D = -26.1%) and ethyl acetate (%D = -23.1%) which were both biased low in the standard associated with FL-02. The continuing calibration standard associated with SL-03 exhibited low bias for ethyl acetate (%d = -38.2%). **Associated results for ethyl acetate are qualified Q.** None of these compounds were detected in the associated samples, the low bias is minimal, therefore the laboratory's ability to detect these compounds should not be adversely impacted.

Vinyl acetate was biased high in the LCS associated with the analysis of both samples. **Associated results for vinyl acetate are qualified Q.** It was not detected in either sample, therefore reporting limits were not impacted. Ethyl acetate was biased slightly low in the LCS associated with SL-03. **Results for ethyl acetate are qualified Q.**

Semivolatile Data (Method 8270)

All project specific QC criteria were met, except as indicated below.

In the Semivolatile Alternate Source Calibration standard (ALT) associated with sample FL-02, %difference (%D) results for bis(2-chloroethoxy)methane exceeded the laboratory's QC limits. **Associated results for bis(2-**

chloroethoxy)methane are qualified UJ for use as estimates. The ALT associated with the reanalysis of SL-03 did not meet criteria for butyl benzyl phthalate. Criteria were marginally exceeded (25.5%D vs %D \leq 25%). As the exceedence is minimal, no impact on the data is expected. Excessive variations in the results for the second source standard may indicate problems with the initial calibration for that compound.

The continuing calibration check standard (CCC) associated with SL-03 exceeded criteria for the target compounds 2,4-dinitrophenol, 2-nitroaniline, 4,6-dinitro-2-methylphenol and butyl benzyl phthalate. The CCC associated with FL-02 also exceeded criteria for 2,3-dinitrophenol. None of these compounds were detected in either sample. **Associated results for are Q flagged.** Due to the small deviations from criteria, data are not expected to be impacted, therefore no qualification is required.

QC acceptance criteria were not met for bis(2-chloroethoxy)methane and, and nitrobenzene in LCS associated with FL-02, while bis(2-chloroethoxy)methane did not meet criteria in the LCS associated with SL-03. Results were biased low. As the samples were past extraction holding time, it was not possible to re-extract and re-analyze them. Low bias may impact a laboratory's ability to detect a compound and lead to possible false non-detects. **The reporting limits for bis(2-chloroethoxy)methane (both samples), and nitrobenzene (FL-02) are qualified Q due to quality deficiencies and are valid for limited use as estimates.**

Surrogate recovery criteria were not met for 2-fluorobiphenyl and nitrobenzene in sample FL-02. Low surrogate recoveries may be indicated of low bias or false non-detects. **Reporting limits for all compounds are qualified UJ for use as estimates due to potential matrix interference.**

Polyaromatic Hydrocarbons(PAHs) (EPA Method 8270 – low level)

All project specific QC criteria were met, except as indicated below.

The LCS and LCS-Duplicate associated with sample FL-02 exhibited low recoveries for Acenaphthylene, Acenaphthene, Fluorene, and Anthracene. The samples were not re-extracted as the extraction holding time had been exceeded. **Reporting limits in FL-02 are qualified Q for use as estimates. As recovery is only slightly below the lower control limit, results should be acceptable for use.** High bias was observed for benzo(a)anthracene in the LCS associated with SL-03. As this compound was not detected in the associated sample, there is no impact on the results.

Pesticide Data (EPA Method SW8081)

All project specific QC criteria were met, except as indicated below.

Low recovery for the surrogate 2,4,5,6-tetrachloro-m-xylene (TCMX) was observed in the method blank associated with SL-03 as well as in samples FL-02 and SL-03. **All compounds are qualified UJ for use as estimates and**

are subject to low bias. Low recovery were observed for alpha-BHC in the LCS associated with SL-03 and FL-02. Associated results are qualified Q.

Pesticides by EPA Method 525.5

All samples were analyzed for alachlor and atrazine were analyzed by Underwriters Laboratories, Inc. All criteria were met.

PCB Data (EPA Method SW8082)

All project specific QC criteria were met except as indicated below.

Low surrogate recoveries were observed for both surrogates in FL-02 and SL-03. SL-03 was re-extracted with acceptable recoveries. FL-02 was re-extracted but 2 days past the extraction holding time. One surrogate was still biased low. All PCB results associated with FL-02 are qualified UJ for use as estimates.

Herbicide Data (EPA Method SW8150)

All QC acceptance criteria were met for herbicide analysis by the above method for the required compounds for this project,

Herbicide Data (EPA Method 531.1)

Aldicarb and Carbofuran were analyzed by Underwriters Laboratory Inc. by EPA Method 525.5. These compounds are not part of the DoD QSM, therefore the laboratory supplied QC limits were used.

Metals (EPA Methods 6010, 6020, 7470)

All calibration requirements as summarized in Appendix D were met for all samples. All other QC criteria were met.

GENERAL CHEMISTRY METHODS

The QSM does not provide QC evaluation criteria/guidance for any of the general chemistry methods employed for this project. The laboratories statistically generated internal QC criteria were therefore employed for data evaluation purposes.

BOD Data (SM5210B)

All method specific QC criteria were met.

Chloride Data by EPA Method 325.2

All method specific QC criteria were met.

Chemical Oxygen Demand (COD) by EPA Method 421.4

All method specific QC criteria were met.

Total Cyanide (CN) by SW846 Method 9014B

All method specific QC criteria were met.

Hexavalent Chromium (CR6) by SM 3500Cr

Samples SL-03 was analyzed 11 minutes after the holding time (≤ 24 hours) had expired due to delays in sample shipment. As the exceedences is minor, it should not impact the sample results. No qualification is necessary. All other method specific QC criteria were met.

Fluoride Data by SM 4500F

All method specific QC criteria were met.

Phenols Data by EPA Method 420.1

All method specific QC criteria were met.

Oil and Grease by EPA Method EPA 1664A

The laboratory reported that a small amount of sample FL-02 was lost during sample extraction. AS the method requires the extraction of the entire sample bottle contents, results might be biased low. Results are qualified UJ for use as estimates.

Ammonia Data by EPA Method 350.1

The method blank associated with SL-03 had a detectable ammonia greater than $\frac{1}{2}$ the RL. Associated sample concentration was greater than ten times the blank level, therefore the data were not impacted. All other method specific QC criteria were met.

Nitrates Data by EPA Method 353.2

Nitrate is analyzed by subtracting the nitrite result from the nitrate-nitrite result. The nitrite was analyzed within the 48 hour hold time. Nitrate-nitrite has a 28 day hold, so the analysis was performed within hold. All method specific QC criteria were met.

Phosphorous Data by EPA Method 365.4

All method specific QC criteria were met.

Sulfate Data by EPA Method 375.4

The method blank associated with SL-03 had a detectable sulfate greater than $\frac{1}{2}$ the RL. Associated sample concentration was greater than ten times the blank level, therefore the data were not impacted. All other method specific QC criteria were met.

Total Dissolved Solids Data by EPA Method 160.1

All method specific QC criteria were met.

Total Organic Carbon Data by EPA Method 415.1

The method blank associated with SL-03 had a detectable TOC greater than $\frac{1}{2}$ the RL. Associated sample concentration was greater than ten times the blank level, therefore the data were not impacted. All other method specific QC criteria were met.

Total Suspended Solids Data by EPA Method 160.2

All method specific QC criteria were met.

APPENDIX A
L1/L2 ANALYTE LIST

LIST L1

Routine Leachate Monitoring Parameters STORET

Temp. of Leachate Sample (°F)	00011
Specific Conductance	00094
pH	00400
Elevation Leachate Surface (ft. AMSL)	71993
BTM of Well Elevation (ft. AMSL)	72020
Leachate Level from Measuring Point ft.	72109
Arsenic (total)	01002
Barium (total)	01007
Cadmium (total) mg/l	01027
Chromium (hexavalent)	01032
Chromium (total)	01034
Copper (total)	01042
Cyanide	00720
Fluoride	00951
Iron (total)	01045
Lead (total)	01051
Manganese (total)	01055
Nickel (total)	01067
Oils (hexane soluble or equivalent)	00550
Phenols	32730
Silver (total)	01077
Zinc (total)	01092
Total Dissolved Solids (TDS) mg/l	70300
Total Suspended Solids	00530
Ammonia Nitrogen - N	00610
Bacteria (Fecal Coliform)	31616
Biochemical Oxygen Demand(BOD ₅)	00310
Mercury (total)	71900
Phosphorous	00665
Chemical Oxygen Demand (COD)	00335

LIST L2

Annual Leachate Monitoring Parameters STORET

Temp. of Leachate Sample (°F)	00011
Specific Conductance	00094
pH	00400
Elevation Leachate Surface	71993

BTM of Well Elevation	72020
Leachate Level from Measuring Point ft.	72109
1,1,1,2-Tetrachloroethane	77562
1,1,1-Trichloroethane	34506
1,1,2,2-Tetrachloroethane	34516
1,1,2-Trichloroethane	34511
1,1-Dichloroethane	34496
1,1-Dichloroethylene	34501
1,1-Dichloropropene	77168
1,2,3-Trichlorobenzene	77613
1,2,3-Trichloropropane	77443
1,2,4-Trichlorobenzene	34551
1,2,4-Trimethylbenzene	77222
1,2-Dibromo-3-Chloropropane	38760
1,2-Dichloroethane	34531
1,2-Dichloropropane	34541
1,3,5-Trimethylbenzene	77226
1,3-Dichloropropane	77173
1,3-Dichloropropene	34561
1,4-Dichloro-2-Butene	73547
1-Propanol	7018
2,2-Dichloropropane	77170
2,4,5-tp (Silvex)	39760
2,4,6-Trichlorophenol	34621
2,4-Dichlorophenol	34601
2,4-Dichlorophenoxyacetic Acid (2,4-D)	39730
2,4-Dimethylphenol	34606
2,4-Dinitrotoluene	34611
2,4-Dinitrophenol	34616
2,6-Dinitrotoluene	34626
2-Chloroethyl Vinyl Ether	34576
2-Chloronaphthalene	34581
2-Chlorophenol	34586
2-Hexanone	77103
2-Propanol (Isopropyl Alcohol)	81310
3,3-Dichlorobenzidine	34631
4,4-DDD	39310
4,4-DDE	39320
4,4-DDT	39300
4,6-Dinitro-O-Cresol	34657
4-Bromophenyl Phenyl Ether	34636
4-Chlorophenyl Phenyl Ether	34641
4-Methyl-2-Pentanone	78133
4-Nitrophenol	34646
Acenaphthene	34205

Acetone	81552
Alachlor	77825
Aldicarb	39053
Aldrin	39330
Alpha - BHC	39337
Aluminum	01105
Ammonia Nitrogen - N	00610
Anthracene	34220
Antimony	01097
Aroclor-1016	34671
Aroclor-1221	39488
Aroclor-1232	39492
Aroclor-1242	39496
Aroclor-1248	39500
Aroclor-1254	39504
Aroclor-1260	39508
Arsenic (total)	01002
Atrazine	39033
Bacteria (Fecal Coliform)	31616
Barium	01007
Benzene	34030
Benzo (a) Anthracene	34526
Benzo (a) Pyrene	34247
Benzo (b) Fluoranthene	34230
Benzo (ghi) Perylene	34521
Benzo (k) Fluoranthene	34242
Beryllium (total)	01012
Beta - BHC	39338
Bicarbonate	00425
Biochemical Oxygen Demand (BOD ₅)	00310
Bis (2-Chloro-1-Methylethyl) Ether	73522
Bis (2-Chloroethoxy) Methane	34278
Bis (2-Chloroethyl) Ether	34273
Bis (2-Ethylhexyl) Phthalate	39100
Bis(Chloromethyl)Ether	34268
Boron	01022
Bromobenzene	81555
Bromochloromethane	77297
Bromodichloromethane	32101
Bromoform	32104
Bromomethane	34413
Butanol	45265
Butyl Benzyl Phthalate	34292
Cadmium (total)	01027
Calcium mg/l	00916

Carbofuran	81405
Carbon Disulfide	77041
Carbon Tetrachloride	32101
Chemical Oxygen Demand (COD)	00335
Chlordane	39350
Chloride mg/l	00940
Chlorobenzene	34301
Chloroethane	34311
Chloroform	32106
Chloromethane	34418
Chromium	01034
Chrysene	34320
Cis-1,2-Dichloroethylene	77093
Cobalt	01037
Copper (total)	01042
Cyanide	00720
DDT	39370
Delta - BHC	46323
Di-N-Butyl Phthalate	39110
Di-N-Octyl Phthalate	34596
Dibenzo (a,h) Anthracene	34556
Dibromochloromethane	32105
Dibromomethane	77596
Dichlorodifluormethane	34668
Dieldrin	39380
Diethyl Phthalate	34336
Dimethyl Phthalate	34341
Endosulfan I	34361
Endosulfan II	34356
Endosulfan Sulfate	34351
Endrin	39390
Endrin Aldehyde	34366
Ethyl Acetate	81585
Ethylbenzene	78113
Ethylene Dibromide (EDB)	77651
Fluoranthene	34376
Fluorene	34381
Fluoride	00951
Heptachlor Epoxide	39420
Heptachlor	39410
Hexachlorobenzene	39700
Hexachlorobutadiene	39702
Hexachlorocyclopentadiene	34386
Hexachloroethane	34396
Ideno (1,2,3-cd) Pyrene	34403

Iodomethane	77424
Iron	01045
Isopropylbenzene	77223
Lead	01051
Lindane	39782
Magnesium	00927
Manganese	01055
Mercury	71900
Methoxychlor	39480
Methyl Chloride	34418
Methyl Ethyl Ketone	81595
Methylene Bromide	77596
Methylene Chloride	34423
Naphthalene	34696
Nickel	01067
Nitrate-Nitrogen	00620
Nitrobenzene	34447
Oil, Hexane Soluble (or Equivalent)	00550
Parathion	39540
Pentachlorophenol	39032
Phenanthrene	34461
Phenols	32730
Phosphorous	00665
Polychlorinated Biphenyls	39516
Potassium	00937
Pyrene	34469
Selenium	01147
Silver	01077
Sodium	00929
Styrene	77128
Sulfate	00945
Tert-Butylbenzene	77353
Tetrachlorodibenzo-p-Dioxins	34675
Tetrachloroethylene	34475
Tetrahydrofuran	81607
Thallium	01059
Tin	01102
Toluene	34010
Total Dissolved Solids (TDS) mg/l	70300
Total Organic Carbon (TOC)	00680
Total Suspended Solids	00530
Toxaphene	39400
Trans-1,2-Dichloroethylene	34546
Trans-1,3-Dichloropropene	34699
Trichloroethylene	39180

Trichlorofluoromethane	34488
Vinyl Acetate	77057
Vinyl Chloride	39175
Xylene	81551
Zinc	01092
m-Dichlorobenzene	34566
m-Xylene	77134
n-Butylbenzene	77342
n-Nitrosodimethylamine	34438
n-Nitrosodiphenylamine	34433
n-Nitrosodipropylamine	34428
n-Propylbenzene	77224
o-Chlorotoluene	77275
o-Dichlorobenzene	34536
o-Nitrophenol	34591
o-Xylene	77135
p-Chlorotoluene	77277
p-Cresol	77146
p-Dichlorobenzene	34571
p-Isopropyltoluene	77356
p-Nitrophenol	34646
p-Xylene	77133
sec-Butylbenzene	77350

LIST L3

RCRA Parameters for Leachate and Condensate

<u>Ignitability</u>	<u>STORET</u>
Flashpoint, Pensky-Martens Closed Cup (°F)	00497
<u>Corrosivity</u>	
pH	00400
<u>Reactivity</u>	
Reactive Cyanide	99040
Reactive Sulfide	99042
<u>Toxicity (TCLP)</u>	
Arsenic	99012
Barium	99014
Cadmium	99016
Chromium	99018
Chromium, Hexavalent	99019
Lead	99020

APPENDIX B
CHAIN OF CUSTODIES

156 Starlite Drive
Marietta, OH 45750

KEMRON
ENVIRONMENTAL SERVICES
CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071

Fax: 740-373-4835

[illegible]

*Homogenize all composite samples prior to analysis

COC No. A 68330

156 Starlite Drive
Marietta, OH 45750**KEMRON**

ENVIRONMENTAL SERVICES

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071

Fax: 740-373-4835

Company Name: To I Test, Inc.																				Program <input type="checkbox"/> NPDES <input type="checkbox"/> AFCEE <input checked="" type="checkbox"/> RCRA <input type="checkbox"/> USAGE <input type="checkbox"/> Other _____			
Project Contact: Tim Boos				Contact Phone #: 847 812 9565																		ADDITIONAL REQUIREMENTS	
Turn Around Requirements: Standard				Location: NAVSTA Great Lakes																			
Project #: 73775.01				Project Name: Supplieside Landfill																			
Sampler (print): Tim Boos				Signature: Tim Boos																			
Sample I.D. No.	Comp.	Grab	Date	Time	Protocol		NUMBER OF CONTAINERS	Hold	VOC (extended list)	SVOC w/ PMA SIM	Herbs	Pest/PCB	Metals	NH ₃ , COD, Phos, TOC	Cl, F, NO ₃ , SO ₄	OG-HEM	Phenols	TDS, TSS	BOD	CN	Cr+6 (HEX)	VOC (trip blank)	
					CWA	SW846																	
SL-03		X	8/01/07	1139		8260	2		X														
		X		10:58		8270	3		X														
		X		11:11		8151	2			X													
		X		1120	8081/8082		1				X												
		X		1125	10010		1					X											
		X		1128	3501/410-365/412		1						X										
		X		1129	325/413-352/3754		1							X									
		X		1130	11664		1								X								
		X		1146	420.1		1									X							
		X		1153	1160.1/1160.2		1										X						
		X		1155	405.1		1											X					
		X		1149	335		1												X				
		X		1150			1													X			
TB-33		X		10:42		8260	2														X		
Relinquished by: (Signature) Tim Boos		Date 8/1/07	Time 15:06	Received by: (Signature) Gene K. Thompson		Relinquished by: (Signature)		Date	Time	Received by: (Signature)													
Relinquished by: (Signature)		Date	Time	Received for Laboratory by: (Signature)		Date	Time	Cooler Temp in °C 5	Remarks: sample times recorded in Central Time Zone.														

*Homogenize all composite samples prior to analysis

APPENDIX C
SUMMARY OF QUALIFIED DATA

Table 1
SUMMARY OF QUALIFIED RESULTS

November 18, 2007

Field Sample ID	Method	Target Analyte	Reported Conc. (mg/L)		Reason for Qualification ⁽¹⁾	Data Impact ⁽²⁾	Qualifier ⁽³⁾
SL-03	8260	Vinyl Acetate	0.01	U	ALT > CL	High Bias	None
FL-02	8260	Vinyl Acetate	0.01	U	ALT > CL	High Bias	None
FL-02	8260	Ethyl Acetate	0.01	U	SSC < CL	Low Bias	UJ
FL-02	8260	Vinyl Acetate	0.005	U	SSC > CL	High Bias	None
FL-02	8260	Iodo Methane	0.005	U	SSC > CL	High Bias	None
SL-03	8260	Vinyl Acetate	0.01	U	SSC > CL	High Bias	None
SL-03	8260	Vinyl Acetate	0.01	U	LCS > CL	High Bias	Q
SL-03	8260	Ethyl Acetate	0.01	U	LCS < CL	Low Bias	Q
FL-02	8260	Vinyl Acetate	0.01	U	LCS > CL	High Bias	Q
SL-03	8260	Ethyl Acetate	0.005	U	LCS < CL	Low Bias	UJ
FL-02	8270	bis(2-chloroethoxy)methane	0.01	U	ALT > CL	Low Bias	UJ
SL-03	8270	bis(2-chloroethoxy)methane	0.01	U	LCS < CL	Low Bias	Q
FL-02	8270	bis(2-chloroethoxy)methane	0.01	U	LCS < CL	Low Bias	Q
FL-02	8270	Nitrobenzene	0.01	U	LCS < CL	Low Bias	Q
FL-02	8270	All semivolatiles	various		SURR < CL	Low Bias	UJ
FL-02	8270/SIM	Acenaphthylene	0.00011	U	LCS < CL	Low Bias	Q
FL-02	8270/SIM	Acenaphthene	0.00011	U	LCS < CL	Low Bias	Q
FL-02	8270/SIM	Fluorene	0.00011	U	LCS < CL	Low Bias	Q
FL-02	8270/SIM	Anthracene	0.00011	U	LCS < CL	Low Bias	Q
SL-03	8270/SIM	Benzo(a)anthracene	0.00011	U	LCS > CL	None	None
FL-02	8081	alpha-BHC	0.000532	U	LCS < CL	Low Bias	Q
SL-03	8081	alpha-BHC	0.000532	U	LCS < CL	Low Bias	Q
FL-02	8081	All pesticides	various		SURR < CL	Low Bias	UJ
SL-03	8081	All pesticides	various		SURR < CL	Low Bias	UJ
FL-02	8082	All PCBs	0.000565	U	SURR < CL	Low Bias	UJ
FL-02	1664A	Oil and Grease	5.24	UJ	Loss of sample	Low Bias	UJ

CCV > CL Continuing Calibration Check standard criteria were not met.
 LCS < CL Laboratory control recovery below lower control limit
 LCS > CL Laboratory control recovery above lower control limit
 ALT > CL Second source calibration standard %difference above control limit
 Result < RL Result is above the MDL but below the RL and subject to poor precision
 SURR < CL Surrogate %Recovery below lower control limit.

(2) Data Impact: High Bias: The associated reported result may overestimate the true value.
 The associated reported result may underestimate the true value or the possibility of a false non-detect exists.
 Low Bias: exists.
 Precision: The associated reported result is subject to high variability.

(3) Qualifier
 Results are estimated and the data are valid for limited purposes. The results are qualitatively acceptable but quantitatively unreliable.
 J -
 Q - Associated quality control criteria were not met. Result is estimated.
 UJ - The reported quantitation limit is estimated because associated quality control criteria were not met.

APPENDIX D
SUMMARY OF QUALITY CONTROL REQUIREMENTS

Initial Calibration quality control requirements for reportable analytes

QC requirement	multi-point calib.	Multi-point %RSD or r^2 OK	Low standard < RL	Alternate Source Standard (ALT)	Alt %D OK	Tune within 12 hours & tune OK	Column breakdown check ok	CCC RSD OK	SPCC RRFs OK
Analytical Method									
8260B	X	X	X	X	X	X		X	X
8270C	X	X	X	X	X	X		X	X
8081B/8082/531.1	X	X	X	X	X		X		
8015/525.5	X	X	X	X	X				
6010B/7000	X	X	X	X	X				
Chloride (325.5)		X	X	X	X				
COD (421.4)		X	X	X	X				
Cr6 (3500 Cr-)		X	X	X	X				
F (SM4500F)		X	X	X	X				
Phenols (420.1)		X	X	X	X				
Ammonia (350.1)		X	X	X	X				
Nitrate (353.2)		X	X	X	X				
Phosphorous (365.4)		X	X	X	X				
Sulfate (375.4)		X	X	X	X				
TDS (160.1)				X	X				
TOC (415.1)		X	X	X	X				
TSS (160.2)				X	X				
CN(9014)	X	X	X	X	X				

Continuing Calibration quality control requirements for reportable analytes

QC requirement	Acceptable tune within 12 hours	CCC %D OK	SPCC RF(50) OK	Column Breakdown Check ok	Continuing Calibration Verification Standard (CCV)	CCV %D OK
Analytical Method						
8260B	X	X	X			
8270C	X	X	X			
8081B/8082/525.5		X		X	X	X
8015/531.1		X			X	X
6010B					X	X
Chloride (325.5)					X	X
COD (421.4)					X	X
Cr6 (3500 Cr-)					X	X
F (SM4500F)					X	X
Phenols (420.1)					X	X
Ammonia (350.1)					X	X
Nitrate (353.2)					X	X
Phosphorous (365.4)					X	X
Sulfate (375.4)					X	X
TOC (415.1)					X	X
CN(9014)					X	X